

# INCREMENTAL TAPE COUPLER

I.T.C.  
100

## GENERAL DESCRIPTION

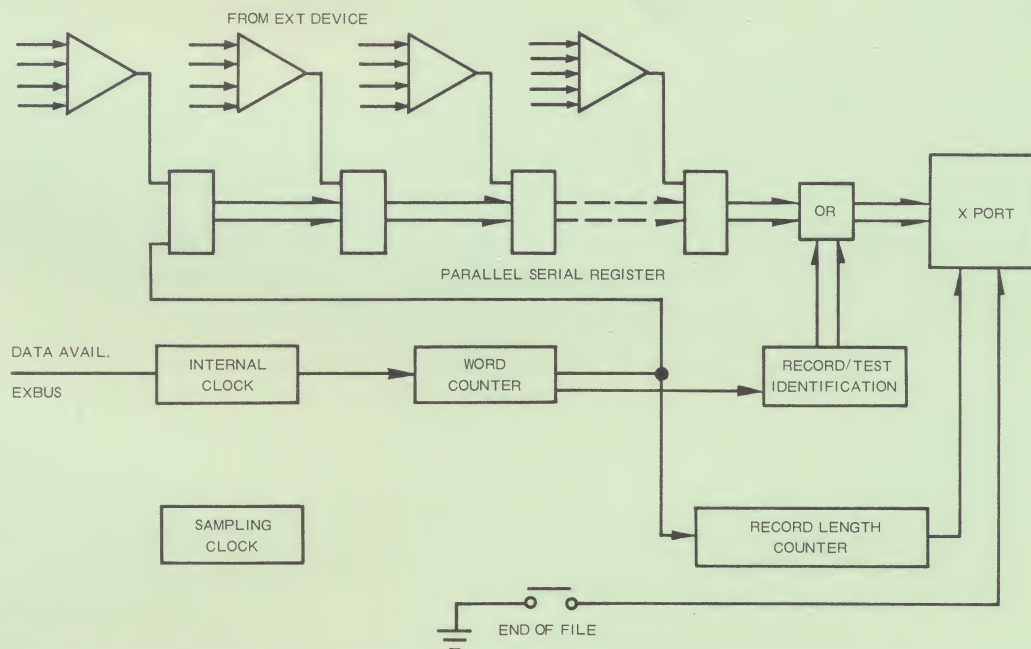
The ICC Incremental Tape Coupler is designed to accept data from various digital output devices such as Digital Voltmeters, Analog to Digital Converters, Counters, Time Code Generators, etc., and format it for recording on an incremental magnetic tape transport. The system accepts data words consisting of four to twelve characters having four to six bits each, and produces a computer compatible magnetic tape at 200, 556, or 800 bits per inch. Up to 12 characters of fixed identification information may also be recorded at the beginning of each record. The ITC-100 can be operated in several modes including advance 1 character, advance 1 word, advance 1 record, and continuous cycle.



## FEATURES

- Accepts up to 12 BCD or Binary Characters.
- Variable Output Record Length.
- Records up to 1000 Characters/Second.
- Automatic GAP Insertion.
- External or Internal Sample Control.
- Parity Check.

## BLOCK DIAGRAM



INFORMATION CONTROL CORPORATION

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## SYSTEM SPECIFICATIONS

### INPUT

LEVELS: 0 volts - logical zero.

+ 4 volts - logical one.

Input impedance - 1K min.

RATE: Samples up to 1000 characters per second.

NUMBER OF INPUT CHARACTERS: 1 to 12 characters with 4 to 6 bits each.

DATA LOAD PULSE: 0 to + 4 volt signal into 1K ohm load.

10 microsecond duration.

POWER: 117 VAC  $\pm$  10%, 60 cycles, 1 amp.

### OUTPUT

IBM compatible tape 200, 556, or 800 BPI, 7 level or 9 level.

### OPTIONS

The Intercoupler can be provided with the following options:

- No. of characters: 4, 6, 8, 10, 12 (or switch selectable).
- No. of bits/character: 4, 6, (or switch selectable).
- Bit density: 200, 556, or 800 BPI.
- Internal sampling clock: 6 binary related frequencies are available, switch selectable.
- Read after write interface and parity check.
- IBM 9 level output tape.

- End of Record: An end-of-record signal and longitudinal parity.

- Enter ID Word: Records the record identification data, selected by the thumbwheel ID switch.

- Other options quoted upon request.

### CONTROLS

MODE SELECT: Advances 1 character, 1 word, 1 record, continuous record.

RECORD LENGTH: Thumbwheel switches set record length from 1 to 9,999 words.

RECORD IDENTIFICATION: Up to 12 thumbwheel switches for entry of fixed identification data.

EXTERNAL-INTERNAL SAMPLE: Select external or internal source for sample command.

END OF FILE: Generates end-of-file gap and end-of-file character.

START-STOP: Enables system to receive external or internal sample commands.

MASTER RE-SET: Clears system for operation.

POWER ON-OFF: Supplies power to system.

### MECHANICAL

Dimensions 3-1/2 x 19", rack mount chassis with slides.

All controls on front panel.



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# HIGH-SPEED DATA ACQUISITION SYSTEM

## DAS-100

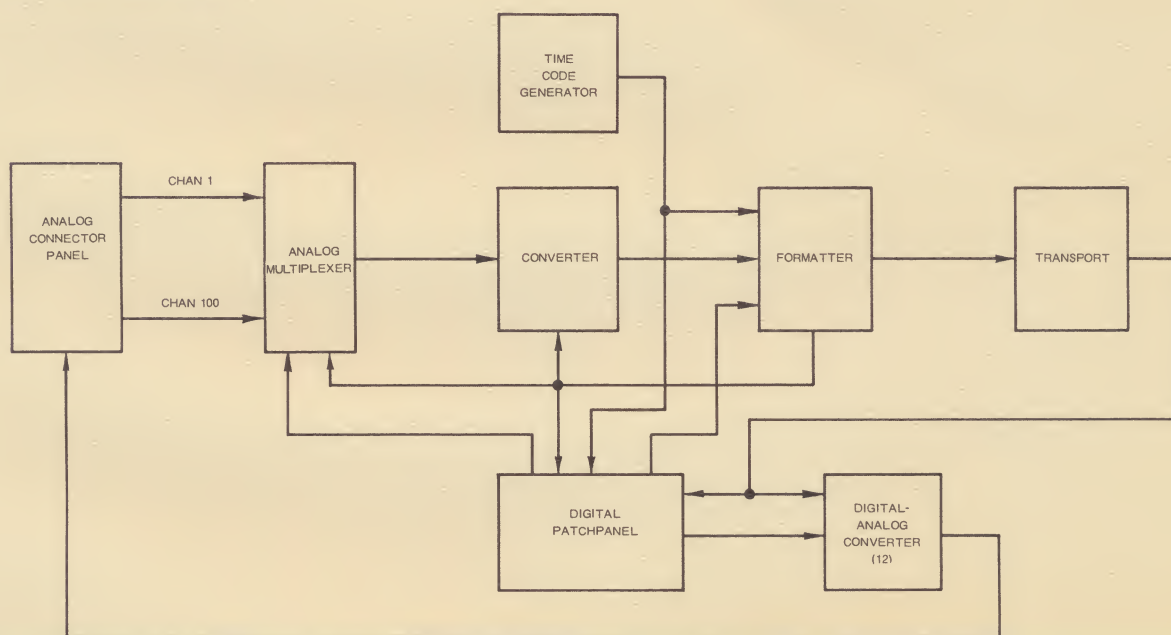
### GENERAL DESCRIPTION

The DAS-100 is a 100 channel High-Speed Data Acquisition System. Each channel is high level,  $\pm 10$  volts single ended input. Each channel is sampled at a rate of 100,000 samples per second, with 12 bit accuracy. The system contains a time code generator with decimal display and parallel binary outputs. Time information is multiplexed with the digitized data and is outputted to the magnetic tape handler at up to 1000 bits per inch in a continuous record. The output is one inch magnetic tape, 16 tracks. Three tracks are reserved for the clock. The system has a playback mode in which any 12 of the 100 channels can drive 12 digital to analog converters, and any single channel can be displayed by binary indicators. The internal sample rate of the system is switch selected. Provision is made for a remote clock. Super-commutation and short cycling are other features of this system.

### FEATURES

- 100,000 samples per second at 12 bit accuracy.
- 100 megohms input impedance.
- Calibration and check procedure.
- Time code generator and display with time recorded on output tape.
- Control over sampling sequence, supercommutation, and short cycling.
- Read after write.
- Parity check and error count.
- Playback with digital to analog output.

### BLOCK DIAGRAM



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## SYSTEM SPECIFICATIONS

### INPUT

± 10 volts.  
100 channels.  
100 megohms input impedance, single ended.

### SAMPLE RATE

The sample rate is up to 100KC with 12 bit accuracy.

### DISPLAY

During record cycle the digitized value of the sample of any one channel is displayed. The channel to be displayed is thumbwheel selected.

### ERROR DETECTION

Parity check is performed on read-after-write. Parity errors are accumulated in an error counter and displayed.

### OUTPUT TAPE FORMAT

The output tape is 1 inch, 16 tracks with packing density up to 1000 bits per inch. Tape format consists of data sample plus 3 clock tracks plus parity.

### READ AFTER WRITE

Tapes may be played back and any 12 channels may be selected for digital to analog conversion. Tapes may be played back at any one of 6 speeds: 120, 60, 30, 15, 7-1/2 and 3-3/4 inches per second.

### DIGITAL TO ANALOG CONVERTER

Inputs 12 bits.  
Output impedance less than 1 ohm.  
Accuracy ± 0.1% overall.  
12 channels provided.

### POWER

117 ± 10%, 60 cycles, 15 amps maximum.

### MECHANICAL

Housed in two standard 6' relay racks.



Represented by



# MEDIUM SPEED DATA ACQUISITION SYSTEM

## DAS-200

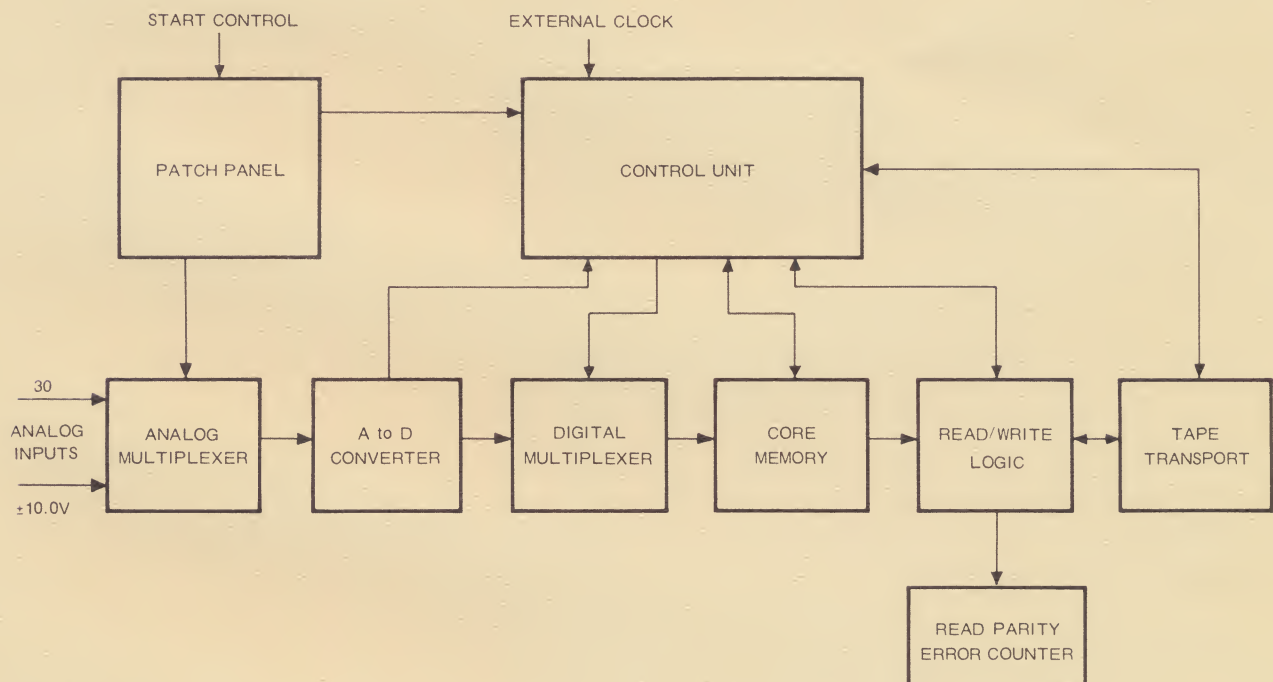
### GENERAL DESCRIPTION

The ICC DAS-200 is a low-priced, fully buffered, medium speed data acquisition system. It will accept up to thirty channels of high-level analog data. The data is sampled at continuous rates up to 1000 samples per second. A core memory is provided to buffer the data, thereby allowing the generation of computer compatible gapped tapes. The tape block length is dependent on memory capacity and can be provided at up to 4,000 characters. Control of the basic system parameters, tape format, etc., is via a patchboard. This provides the operator with a flexible means of control which allows the system to be adapted to numerous applications.

### FEATURES

- Continuous sampling rates to 1KC.
- Internal or external clock.
- 100 K input impedance,  $\pm 10.0$  volt levels.
- Supercommutation and short cycling.
- Fixed identification data.
- Generates IBM compatible tape.

### BLOCK DIAGRAM



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## **SYSTEM SPECIFICATIONS**

### **INPUT**

± 10.0 volts.

Input impedance 100 megohms, single ended.

Input channels - 1 to 100, single ended.

### **SAMPLE RATE**

Maximum continuous sample rate 1KC.

Option to 100KC.

### **ACCURACY**

± 0.1 percent (10 bits, up to 14 bits available).

### **PARITY CHECK**

System generates and checks parity.

### **IDENTIFICATION DATA**

12 thumbwheel switches for entering fixed identification information. ID can be entered as a header record or at the beginning of each output record.

### **OUTPUT TAPE**

IBM compatible at 200 bits per inch. 556 and 800 bits per inch available as an option as well as 9 track IBM compatible.

### **OUTPUT TAPE HANDLER**

IBM 729 Mark II with options for other digital tape handlers.

### **OUTPUT RECORD LENGTH**

Variable to 250 characters (dependent on memory size, can be up to 4,000 characters.)

### **PLAYBACK**

Performs read after write parity check. On playback cycle also performs parity check and provides digital to analog output of any selected channel. The channels are selected by patchboard wiring.

### **OUTPUT IMPEDANCE**

Output impedance of the digital to analog converters is 100 ohms, output current is plus or minus 10 mils.

### **POWER REQUIREMENTS**

117 volts ± 10%, AC, 60 cycles, 15 amps.

### **MECHANICAL**

2 standard 19", 6 foot racks.



Represented by



# LOW SPEED DATA ACQUISITION SYSTEM

## DAS-300

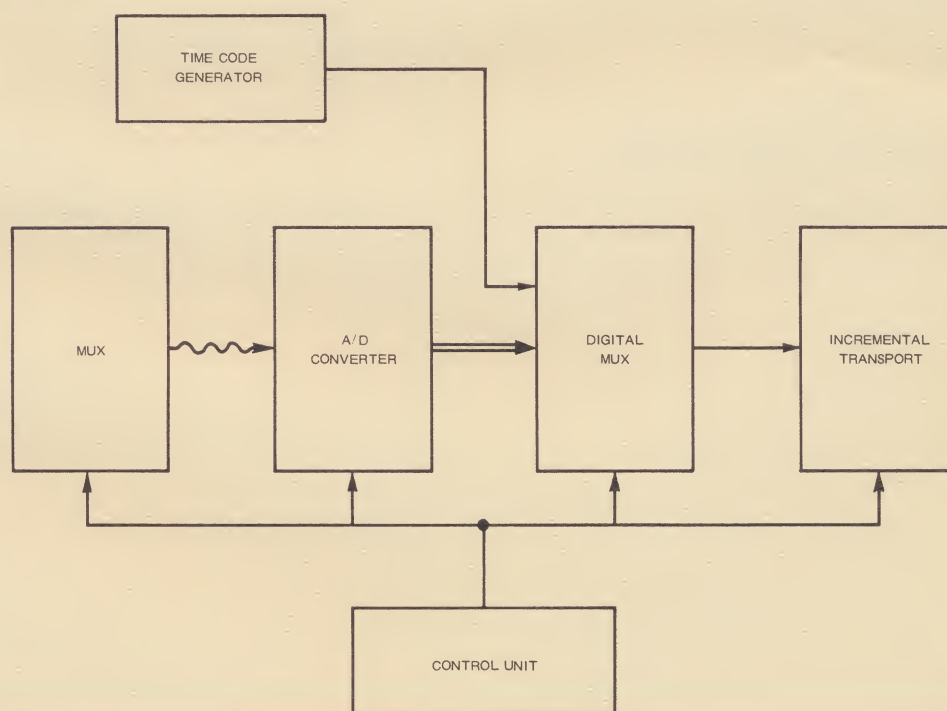
### GENERAL DESCRIPTION

The ICC Low Speed Data Acquisition System DAS 300 is designed to sample analog input signals, convert the analog samples to a digital representation, and to record the digital values on magnetic tape in computer compatible format. The system is constructed so as to allow maximum operator control of all major system parameters. It can readily be adapted by the user to accommodate numerous applications in which different sampling rates and tape formats are required. The system is designed to be used with an incremental tape transport operating at 200, 556 or 800 bits per inch. Up to 12 characters of fixed identification information may be recorded at the beginning of each record. In addition, there are digital inputs provided so that a time code generator may be added and the time code information may be recorded on the output tape.

### FEATURES

- 100 Megohms input impedance.
- Up to 200 three wire input channels.
- Control over a number of inputs and sampling sequence.
- Variable sampling rate.
- Programmable Gain Amplifier.
- Computer compatible tape format with variable block lengths.
- Simple calibration and operation check procedure.
- Switch selectable block length.

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## SYSTEM SPECIFICATIONS

### INPUT

200 three wire channels.  
100 Megohms impedance.  
 $\pm 10$  Millivolts to  
 $\pm 10.0$  volts full scale.

### SAMPLE RATE

Either external or internal sample rates may be selected.

Internal sample rates are 200, 100, 50, 25, 10, and 1 sample(s) per second.

### RESOLUTION

Up to 4 BCD digits plus sign to resolve the range of  $\pm 10.0$  volts.

### DISPLAY

The digitized value of the selected channel is displayed.

### ACCURACY

Accuracy is  $\pm .05\%$ ,  $\pm \frac{1}{2}$  least significant digit.

### OUTPUT

IBM Compatible Tape at 200 bits per inch.

### EXTERNAL DATA LOAD PULSE

0 to + 5V signal into 1K Ohm load.  
10 microsecond duration.

### POWER

117 volts a.c.  $\pm 10\%$ , 60 cycles, 10 amp maximum.

### MECHANICAL DIMENSIONS

One standard 19"x6" rack.  
All controls on front panel.

### CONTROLS

MODE SELECT: Advance 1 character, 1 sample, 1 record, continuous record, and stop.

RECORD LENGTH: Thumbwheel switches set record length from 1 to 9,999 samples.

EXTERNAL-INTERNAL SAMPLE: Selects external or internal source for sample command.

FIXED DATA SWITCHES: Up to 12 thumbwheel switches for fixed identification data recording.

END OF FILE: Generates end-of-file gap and end-of-file character.

START-STOP: Enables system to receive sample commands.

MASTER RE-SET: Clears system for operation.

POWER ON-OFF: Supplies power to system.

CALIBRATE-RUN SWITCH: Applies calibration voltage to input channels for calibration mode of operation.

PATCHBOARD: Provides for supercommutation, short cycling, and sequence of sampling channels. The gain per channel is also selected via the patchboard. Gains of 1, 5, 10, 100, and 1,000 may be selected.

### OPTIONS

The following options are available in the Low Speed Data Acquisition System:

Single wire input.

556 or 800 bits per inch.

Read after write, with parity check and error accumulation.

Playback with digital to analog output.

Time code generator input.

Other options quoted upon request.



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